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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,572	07/07/2005	Kenichi Ueda	SEKI-0011	7811
68733 7590 04/30/2008 THE FLESHNER GROUP, PLLC P.O. BOX 1397 ASHBURN, VA 20146-9998				
EXAMINER				
MOHR, ERIC JOHN				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
04/30/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,572

Applicant(s)

UEDA, KENICHI

Examiner

Eric J. Mohr

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 1 and 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/IB)
Paper No(s)/Mail Date 7 July 2005 and 10 April 2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. The following claims are objected to because of informalities:
 - a. Claim 1: "types of original" has been interpreted as "types of original data"
 - b. Claim 4: "do-to-dot" has been interpreted as "dot-to-dot"

Appropriate correction is required.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 12 and 26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These claims lack the proper form for a claim directed to computer/machine readable instructions.

To be statutory, claims directed to computer/machine readable instructions must be embodied on a computer readable medium encoded with a process or data structure usable by a computer. A machine-readable medium is not acceptable. For the claim to be statutory the preamble of the claim must define a structural and functional interrelationship between the process or data structure and computer software and hardware components. As a result, the preamble of the claim must define a process or data structure as a computer readable medium embodying the process or data structure. Further, the computer readable medium cannot be any type of signal as defined by the specification or claim itself. See MPEP § 2106.01.

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Examples of acceptable language in computer-processing related claims :

1. "computer readable medium" encoded with (Options Below)
[a] "a computer program"
[b] "software"
[c] "computer executable instructions"
[d] "instructions capable of being executed by a computer"
2. "a computer readable medium" (Options below) "computer program"
[a] storing a
[b] embodied with a
[c] encoded with a
[d] having a stored
[e] having an encoded

Correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 3, 16, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 3 recites the limitation of "above-described" colors. These colors are not described in the claim 1, from which claim 3 depends. This phrase has been removed for purposes of examination.
6. Claim 16 discloses "an accessories made by at least one of color indicating elements including colored glass balls, colored stones, strings and fibers, or clothes." This section does not grammatically flow with the rest of the claim. Further, this claim depends on claim 13, which recites "recording the digital data by displaying the color dot

train as a color dot image on a media able to be printed or drawn", which does not support the quoted limitation of claim 16. For these reasons the quoted limitation has been removed for examination purposes.

7. Claim 19 recites the limitation "the direct data" and "the indirect data" in claim 13. There is insufficient antecedent basis for this limitation in the claim. Claim 19 has been grouped with similar claim 17 for purposes of examination

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 13, 14, 16, 20, 22-24, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Shamir, US 5,568,555 (hereinafter "Shamir").

Regarding claim 13, Shamir discloses a color dot code system comprising steps of; preparing a color code in which each color is corresponding to a row of bits (**column 19, lines 66: a number of bits represents a color dot**); converting digital data of an original document to a color dot train according to the color code (**C19, L62-66: convert data to bits which are represented by a colored dot**); recording the digital data by displaying the color dot train as a color dot image on a media able to be printed or drawn (**C19, L34-60: the data that is encoded is imaged on a film**); reading out the color dot train from the color dot image displayed on the media (**C20, L14-20: film**

containing color dot information is read); and restoring the digital data of the original document by converting the read-out color dot train to a train of the color code (**C20, L20-25: information is detected and displayed from the color dot information**).

Regarding claims 20, 22, 23, and 26, Shamir discloses a computing system that implements the system of claim 13, which may be implemented in hardware or software (**C19, L34-52: encoder; C20, L14-25: decoder**).

Regarding claim 14, Shamir discloses the color dot image has an arbitrary shape (**C3, L40-50: the image can be stored on mediums of different shapes and sizes**) and each dot of the color dot image has an arbitrary shape and an arbitrary size (**C35, L31-35: dots can be of any size**).

Regarding claim 16, Shamir the media is one selected from a recording medium made from at least one of a group including paper, wood, glass, cloth or plastics (**C3, L40-50: the recording medium can be paper, film, plastic, etc...**).

Regarding claim 24, Shamir discloses the reader device being a scanner (**C20, L14-17: label is scanned**) or a digital camera (**Figure 11A, label 430**).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 15, 17-19, 21, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shamir as applied to claim 13 above, and further in view of Tack-don et al., US 7,020,327 (hereinafter "Tack-don").

Regarding claim 15, which is representative of claim 21, Shamir discloses creating dots using primary colors (**C19, L1-4**) and primary colors in relation to printing devices (**C29, L57-60**). Shamir does not explicitly disclose using four of these colors and using a code of two-bit length. Tack-don discloses a code that uses colors to represent data, including the use of four color represented by two-bit strings (**Figure 2A and description thereof in C6, L1-4**).

Shamir and Tack-don disclose similar inventions, both coding information using colored dots. Further, the technique of data representation using the fewest bits possible was well known in the art at the time of invention as a means to reduce data storage and transmission.

Regarding claim 17, which is representative of claim 19, Tack-don discloses that direct data as it is comprehensible by humans are mixedly indicated on the medium together with indirect data made by color dot trains converted from the digital data of the original document (**Figure 10**).

Regarding claim 18, Shamir discloses that the dot code can convey contract information (**C42, L26-34**) and can be used as a way to authenticate a document to prevent counterfeiting (**C35, L36-55**).

Regarding claim 25, Shamir discloses a medium displaying information by means of the color dot code system (**C42, L17-24**) as does Tack-don (**Figure 10**).

12. Claims 1, 2, 5-7, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shamir, US 5,568,555 (hereinafter "Shamir") further in view of Watson, US 6,467,307 (hereinafter "Watson").

Regarding claim 1, which is representative of claims 11 and 12, Shamir discloses a color dot code system, representing various types of data such as documents and audio data by color code trains **(C5, L7-36: system and data are described)**, generating color dot images based on the color dot trains, managing the various types of original based on the color dot images data in a computer **(C42, L42-44)**, and furthermore, recording and storing the various types of data by drawing the color dot images on various types of media such as paper and wood **(C3, L40-50: the recording medium can be paper, film, plastic, etc...)**, and restoring the various types of data from the recorded and stored color dot images **(C20, L20-25)**; comprising a means for representing various types of data by a color code train bits **(C19, L34-52: encoding process described)**; a means for generating a color dot image corresponding to the color code train bits **(column 19, lines 66: a number of bits represents a color dot)**; a means for managing the various types of data in a computer using the color dot image **(C42, L42-44: data can tie into a computerized information management system)**; a means for recording and storing the color dot image on a medium such as paper through a method of printing, drawing or the like **(C19, L34-60: the data that is encoded is imaged on a film)**; a means for reading the recorded and stored color dot image using a reading device as a scanner **(C20, L14-17: label is scanned)**, a camera

(**Figure 11A, label 430**) or the like; a means for processing the color dot images read by the reading means using a color dot code processor (**C20, L14-25: decoding system is described**); and a means for restoring the various types of data such as documents and audio data from the color dot image using the color dot code processor (**C20, L20-25: information is detected and displayed from the color dot information**).

Shamir does not disclose a means for producing an article as fashion accessory or the like or clothing using balls of colored glass balls, stone balls or the like, yarn, fabric or the like, relating to the color dot image. Watson discloses creation of a wearable color coded article (**C2, L6-17**).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to automate the data coding and accessory creation process of Watson via the means of Shamir, since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art.

Regarding claim 2, Shamir discloses that the character of basic colors for the color code train is appropriate to quality of the printer for recording and storing, quality of the recording media, and precision of the device for reading the color dot images recorded on the media (**C19, L1-4 and C29, L57-60: effective primary colors are used which may be primary colors from the printer**), for example, when printing and recording on paper using printing ink or the like, the four primary colors of the printing ink, cyan (C), magenta (M), yellow (Y), and black (K), are used, alternatively, blue is

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used instead of cyan (C) and red is used instead of magenta (M); furthermore, when the printing paper, printer, and reading device have high qualities, a multiplicity of colors such as 8 colors or 16 colors are used in addition to augment the 4 colors, and when data is managed in the computer, the kind of colors suitable for favorable display of images are used **(C3, L64 to C4, L35: intensities are chosen based on scanning hardware characteristics)**.

Regarding claim 5, Shamir discloses that the means for reading the color dot images recorded and stored on various media such as paper is of contact type or non-contact type, and magnifying type using a lens system **(C4, L32-35: optical devices include lenses)**, the contact type including a scanner **(C20, L14-17: label is scanned)**, a hand-held scanner or the like used as a peripheral device of a personal computer, and the non-contact type including a digital camera **(Figure 11A, label 430)**, a video camera, or a mobile phone or a hand-held terminal attached with a camera.

Regarding claim 6, Shamir discloses that the color dot image has an arbitrary shape **(C3, L40-50: the image can be stored on mediums of different shapes and sizes)**, and the dots have arbitrary size individually **(C35, L31-35: dots can be of any size)**.

Regarding claim 7, Shamir discloses a data management system for performing data management in a computer utilizing the color dot images **(C42, L42-44: data can tie into a computerized information management system)**.

Regarding claim 9, Shamir discloses that the dot code can convey contract information (**C42, L26-34**) and can be used as a way to authenticate a document to prevent counterfeiting (**C35, L36-55**).

Regarding claim 10, Shamir discloses a means for realizing a secret section through the color dot images in printed matter or in internal computer data, and representing the encrypted data as indirect data using the color dot image, the secret section being intended to remain confidential within printed matter that may possibly be readily exposed to or referenced by third parties. (**C35, L36-55**)

13. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shamir and Watson as applied to claim 1 above, and further in view of Tack-don.

Regarding claim 3, Shamir discloses a set number of bits corresponding to each color used in coding. Shamir does not explicitly disclose using four of these colors and using a code of two-bit length. Tack-don discloses a code that uses colors to represent data, including the use of four color represented by two-bit strings (**Figure 2A and description thereof in C6, L1-4**).

Shamir and Tack-don disclose similar inventions, both coding information using colored dots. Further, the technique of data representation using the fewest bits possible was well known in the art at the time of invention as a means to reduce data storage and transmission.

14. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shamir and Watson as applied to claim 1 above, and further in view of Wang et al., US 6,119,937 (hereinafter "Wang").

Regarding claim 4, Shamir discloses that dots can be of any size and shape and consideration of the input scanner properties when setting properties of the dots. Shamir does not explicitly disclose that the means for recording and storing the color dot images by printing or drawing on the various recording media such as paper, wood, glass, fabric, and plastic determines size of the color dots and the dot-to-dot intervals in response to quality of the media and precision of the recording device for the media, so that when a current inkjet printer for personal computers prints out on a printer paper, in consideration of the printer paper quality and the printing precision of the ink jet printer, the size of the printing color dot is set to, for example, no less than 0.05 mm in height and no less than 0.05 mm in width, and the dot-to-dot interval is set to, for example, no less than 0.05 mm in the transverse direction and no less than 0.05 mm in the lateral direction. Wang discloses printing of a dot code on paper, where the dot size and density are determined by printer quality (**C17, L19-29**) and paper quality (**C17, L13-15**) using a dot diameter adjustment process.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the invention of Shamir to include compensating for paper and printer characteristics when printing a dot code as disclosed by Wang. Shamir and Wang are drawn to the similar subject matter of dot codes which can be printed and scanned, hence applying the dot diameter adjustment process of Wang to Shamir would

produce the expected result or reducing print errors and future scan errors. Further, applicant has not disclosed that the specific dot size and spacing limitations provide an advantage, are used for a particular purpose or solve a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with Wang's method of dot diameter adjustment because the specific printing situation is tested to determine if desired results of no errors in reading back the dots are obtained.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shamir and Watson as applied to claim 1 above, and further in view of Fry, US 2001/0011281 (hereinafter "Fry").

Regarding claim 8, Shamir discloses a means for creating a color dot code from input data as well as the means to reverse the process and recover the original data (see claim 1). Shamir does not disclose providing a mixture of direct data as written characters and the like comprehensible by humans as it is and indirect data in the form of the color dot images converted from various types of data, performing data management in a computer with the data mixture as a single file in the same database, and when printing thereof, printing the direct data and indirect data in mixed form on the same paper surface as to fuse the direct data and the indirect data; comprising a means for managing various forms of data by restoring and converting to the direct data from the indirect data, a means for reading the color dot image of the printed indirect data portion using a camera, a scanner, or the like. Fry discloses a system which scans

documents and prints them with a unique identification code, also storing the document and code in a database for future retrieval (**paragraph 0013 and Figure 1**).

Concerning combination, Shamir discloses the creation of a computer readable code, while Fry uses a computer readable code in a document identification system. It would have been obvious at the time of invention to use the code from Shamir as the document identifier in Fry, therefore substituting known elements in the art to obtain predictable results.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric J. Mohr whose telephone number is (571)270-5140. The examiner can normally be reached on 7:30am-5pm M-Th, 7:30am-4pm Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric J Mohr/

Examiner, Art Unit 2624

/Jingge Wu/

Supervisory Patent Examiner, Art Unit 2624